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EXAMINER

NOTE, JANIS L

ART UNIT PAPER NUMBER

1756

DATE MAILED: 10/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/679,480

Applicant(s)

SUZUKI ET AL.

Examiner

Janis L. Dote

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,5-7,10,11,15-17,20,24-26,29,33-35,38-45,47,48,50,51 and 53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5-7,10,11,15-17,20,24-26,29,33-35,38-45,47,48,50,51 and 53 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

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1. A request for continued examination (RCE) under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicants' submission filed on Aug. 31, 2006, has been entered.

2. The examiner acknowledges the cancellation of claims 49 and 52 and the amendments to claims 1, 10, 20, and 29 set forth in the amendment filed on Aug. 8, 2006, which was entered upon the filing of the RCE. Claims 1, 5-7, 10, 11, 15-17, 20, 24-26, 29, 33-35, 38-45, 47, 48, 50, 51, and 53 are pending.

3. The objection to claim 49 under 37 CFR 1.75(c), set forth in the office action mailed on May 8, 2006, paragraph 3, has been mooted by the cancellation of claim 49 set forth in the amendment filed on Aug. 8, 2006.

4. Applicant is advised that should claim 11 be found allowable, claim 50 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an

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application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim.

See MPEP § 706.03(k).

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1, 5, 38, 39, and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent 8-029998 (JP'998), as evidenced by applicants' admission at page 31, lines 9-11, of the instant specification (applicants' admission I), combined with Japanese Patent 07-295250 (JP'250), and Schaffert, Electrophotography, p. 50 and Fig. 4a, and US 4,468,110 (Tanigawa).

See the DERWENT machine-assisted translations of JP'998 and JP'250, and the Japanese Patent Office (JPO) machine-assisted translation of JP'998 for cites.

JP'998 discloses an electrophotographic photoreceptor comprising a conductive aluminum drum, an intermediate layer, a charge generation layer, and a charge transport layer. The charge generation layer comprises 3 parts by weight of a τ -form

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metal-free phthalocyanine pigment and 3.5 parts by weight of the asymmetric bisazo pigment (I-24) that meets the limitations of formula (VII) recited in instant claim 38. DERWENT translation, Table 1B(6), compound (I)-24; paragraphs 0035 and 0042; and example 8 in paragraph 0047; and JPO translation, paragraph 0035, lines 4-5. The weight ratio of phthalocyanine pigment to bisazo pigment is 3:3.5, which is within the range of 1:5 to 5:1 recited in instant claim 1. The intermediate layer has a layer thickness of 0.1 μm , which meets the layer thickness range of "up to 10 μm , excluding 0" recited in instant claim 48. See the JPO translation, paragraph 0035, lines 4-5. (Note that the DERWENT translation of paragraph 0035 is missing the text in lines 4-5 of the JPO translation.) JP'998 also discloses that the asymmetric bisazo pigment can equally be the asymmetric bisazo pigment (I-29), which meets the limitations of formula (VIII) recited in instant claim 39. See the DERWENT translation, Table 1-(7), compound (I)-29; paragraph 0043; and example 9, paragraph 0047. According to JP'998, its photoreceptor has high spectral sensitivity in the visible light to the near infrared region. DERWENT translation, paragraph 0004.

JP'998 does not exemplify a photoreceptor comprising an intermediate layer comprising titanium oxide as recited in the

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instant claims. However, JP'998 discloses that a fine-powder pigment of a metallic oxide, such as titanium oxide, may be added to the binder resin of its intermediate layer to prevent the occurrence of moire and to reduce the residual electric potential of the photoreceptor. DERWENT translation, paragraph 0030. These are the same benefits sought by applicants. See the instant specification, page 31, lines 9-11.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of JP'998, to add the metal pigment titanium oxide to the intermediate layer in the photoreceptor disclosed by JP'998. That person would have had a reasonable expectation of successfully obtaining an electrophotographic photoreceptor that prevents the occurrence of moire and exhibits a reduction in residual electric potential.

JP'998 also does not disclose that the charge transport layer comprises a sulfur-containing compound as recited in the instant claims. However, JP'998 discloses that the charge transport layer can comprise an antioxidant. DERWENT translation, paragraph 0027.

JP'250 discloses sulfur-containing compounds that meet the compositional limitations of formulas (III), (S-1), (S-2), and (S-3) recited in the instant claims. JP'250 discloses that

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said sulfur-containing compounds can be used as antioxidants in charge transport layers of photoreceptors. DERWENT translation, paragraph 0007, compounds (I-1) to (I-4) at paragraph 0026, compounds (II-1) to (II-3) at paragraph 0028. JP'250 exemplifies a charge transport layer comprising 1.5 parts by weight of the sulfur-containing antioxidant per 100 parts by weight of the charge transport material. The amount of 1.5 parts by weight was determined from the information provided in the DERWENT translation, paragraph 0050. The amount of 1.5 parts by weight per 100 parts by weight of the charge transport material is within the range of "0.1 to 5 parts by weight . . . based on 100 parts by weight" of the charge transport material recited in instant claim 1. JP'250 discloses that said sulfur-containing compounds prevent the deterioration of the photoreceptor due to ozone in the ambient air or due to strong light irradiation. The photoreceptor is said to have improved potential stability over long periods of time. DERWENT translation, paragraphs 0003, 0006, and 0007, and paragraph 0054, lines 1-4. JP'250 further teaches that its sulfur-containing antioxidants provide photoreceptors with improved stability of electrification and sensitivity over long periods of time compared to known hindered phenol antioxidants.

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DERWENT translation, Table 1, comparative examples 3 and 4, and paragraph 0054, lines 14-18.

It would have been obvious for a person having ordinary skill in the art to use JP'250's sulfur-containing compounds that meet the compositional limitations of formulas (III), (S-1), (S-2), or (S-3) recited in the instant claims, in an amount of 1.5 parts by weight per 100 parts by weight of the charge transport material in the charge transport layer, as the antioxidant in the photoreceptor rendered obvious over the teachings of JP'998. That person would have had a reasonable expectation of successfully obtaining a photoreceptor that has improved potential stability over long periods of time and that provides stable toner images after many repeated copies.

The recitation, "the photoreceptor is suitable for a reverse developing method in an electrophotographic image forming apparatus which comprises a contact charger," in claim 1 is merely a statement of intended use that does not distinguish the photoreceptor rendered obvious over the combined teachings of the cited prior art. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing

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the intended use, then it meets the claim. It is well known in the electrophotographic arts that that the "production of positive prints from line negatives requires only a change of the xerographic developing material." See Schaffert, p. 50, section 2.6.1, lines 1 and 2. According to Schaffert, "[w]hen a xerographic plate sensitized with positive charges is exposed to a line negative, the image areas are discharged and the nonimage areas remain charged . . . because of the fringe field effect, negative charges will be induced on the surface of the xerographic plate near the edges of the image areas. Such an area is represented at E in Fig. 4a. Now, if the plate is developed with an electropositive developer, the positively charged toner will be attracted to the induced negative charges, and a photographically positive image is developed." Schaffert further teaches that in the case of xerographic plates requiring negative sensitization, an electronegative developer would be used. See Schaffert, page 50, section 2.6.1, lines 4-13, and Fig. 4a. According to Tanigawa, "in reversal development, there is used a developer charged with the same polarity as that of the latent image background portion of the photosensitive medium. The developer is applied to the latent image portion where the charge on the surface of the photosensitive medium has been decayed by the laser beam exposure." Tanigawa, col. 1,

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lines 49-55. As discussed above, the photoreceptor rendered obvious over the combined teachings of the cited prior art meets the photoreceptor limitations recited in the instant claims. Thus, on the present record, the intended use recited in instant claim 1 does not appear to result in a compositional or structural difference between the photoreceptor recited in the instant claims and the photoreceptor rendered obvious over the combined teachings of the cited prior art.

7. Claim 47 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP'998, as evidenced by applicants' admission I, combined with JP'250, Schaffert, and Tanigawa, as applied to claim 1 above, further combined with additional teachings in JP'998. See the DERWENT translations of JP'998 and JP'250, and the JPO translation of JP'998 for cites.

JP'998, as evidenced by applicants' admission I, combined with JP'250, Schaffert, and Tanigawa renders obvious an electrophotographic photoreceptor as described in paragraph 6 above, which is incorporated herein by reference.

JP'998 does not exemplify an intermediate layer having a layer thickness of 3 m as recited in instant claim 47. However, as discussed in paragraph 6 above, JP'998 discloses that a fine-powder pigment of a metallic oxide, such as titanium oxide, may

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be added to the binder resin of its intermediate layer to prevent the occurrence of moire and to reduce the residual electric potential of the photoreceptor. DERWENT translation, paragraph 0030. These are the same benefits sought by applicants. See the instant specification, page 31, lines 9-11. JP'998 also teaches that the intermediate layer may have a layer thickness of "0 to 10 μm ." DERWENT translation, paragraph 0031. The range of "0 to 10 μm " encompasses the thickness of 3 μm recited in instant claim 47.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of JP'998, to add the metal pigment titanium oxide to the intermediate layer and to adjust, through routine experimentation, the thickness of the intermediate layer, such that the thickness is 3 μm , as recited in instant claim 47, in the photoreceptor rendered obvious over the combined teachings of JP'998, JP'250, Schaffert, and Tanigawa. That person would have had a reasonable expectation of successfully obtaining an electrophotographic photoreceptor that prevents the occurrence of moire and exhibits a reduction in residual electric potential, and that has the benefits disclosed by JP'250.

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8. Claims 10, 11, 15, 20, 24, 29, 33, 40-45, 50, 51, and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP'998, as evidenced by applicants' admission I, combined with JP'250, Schaffert, and Tanigawa, as applied to claims 1, 5, 38, and 39 above, further combined with US 5,047,803 (Kanoto). See the DERWENT translations of JP'998 and JP'250, and the JPO translation of JP'998 for cites.

JP'998, as evidenced by applicants' admission I, combined with JP'250, Schaffert, and Tanigawa renders obvious an electrophotographic photoreceptor as described in paragraph 6 above, which is incorporated herein by reference.

JP'998 does not disclose that the electrophotographic photoreceptor can be used in a process cartridge or in an apparatus as recited in the instant claims. Nor does JP'998 disclose that its photoreceptor can be used in the imaging forming method recited in the instant claims.

However, the use of process cartridges in electrophotographic apparatuses is well known in the art.

Kanoto discloses that process cartridges in electrophotographic apparatuses are well known in the art. Kanoto discloses that process cartridges comprising an electrophotographic photoreceptor and at least one processing means, such as a contact roller charger or a corona charger, a

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developing device, a cleaner, and other elements are widely used in the field of image forming apparatuses that are small and that do not require maintenance. Col. 1, lines 18-28, and col. 3, lines 36-38. Kanoto discloses an imaging forming apparatus comprising a process cartridge that is easily dismounted from the main assembly of the image forming apparatus. Col. 1, lines 60-63. Kanoto shows an example of such an apparatus in Fig. 1. The apparatus comprises a process cartridge **100**, a laser beam scanner **7** as the image-wise exposure source, an image transfer roller **8** to transfer the toned image from the photoreceptor to a receiving member, and a pair of fixing rollers **15a** and **15b** to fix the toned image on the receiving member. The process cartridge **100** comprises a photosensitive drum **1** (i.e., photoreceptor), a charging roller **2**, a developing device **3**, and a cleaning device **4** to remove residual toner or other contaminants from the photoreceptor after development. See Fig. 1, and col. 2, line 37, to col. 4, line 38. Charging roller **2** meets the contact charger recited in instant claims 11, 50, 51, and 53. Kanoto discloses that the charging roller **2**, the developing device **3**, or the cleaning device **4** need not be contained in the process cartridge **100**, but can be part of the image forming apparatus. Col. 2, lines 57-60. Kanoto further discloses that

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the developing device 3 in the process cartridge or image forming apparatus can reverse develop the electrostatic latent image formed on the photoreceptor with a developer having the same polarity as the charge remaining on the photoreceptor.

Col. 3, lines 57-61. Said developing device meets the developing device recited in instant claims 10 and 20. Kanoto further discloses that its imaging apparatus performs an image forming process that meets the process steps recited in instant claims 29 and 53, but for the step of the providing the particular photoreceptor. Kanoto, col. 3, line 49, to col. 4, line 38.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Kanoto, to incorporate the electrophotographic photoreceptor rendered obvious over the combined teachings of JP'998, JP'250, Schaffert, and Tanigawa in Kanoto's detachable process cartridge in its image forming apparatus. That person would have had reasonable expectation of successfully obtaining a reversal development imaging method and an image forming apparatus comprising an easily detachable process cartridge having the benefits of being small and free from maintenance, each of which provides stable toner images after many repeated runs as disclosed by JP'250.

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9. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP'998, as evidenced by applicants' admission I, combined with JP'250, Schaffert, and Tanigawa, as applied to claim 5 above, further combined with US 4,507,374 (Kakuta), as evidenced by applicants' admission at page 21, lines 11-19, of the instant specification (applicants' admission II), and DERWENT abstract Acc. No. 1983-816039. See the DERWENT translations of JP'998 and JP'250, and the JPO translation of JP'998 for cites.

JP'998, as evidenced by applicants' admission I, combined with JP'250, Schaffert, and Tanigawa renders obvious an electrophotographic photoreceptor as described in paragraph 6 above, which is incorporated herein by reference.

As set forth in paragraph 6, supra, JP'998 discloses that the phthalocyanine pigment is a τ -form metal-free phthalocyanine. However, JP'998 does not disclose that the τ -form metal-free phthalocyanine pigment has the X-ray diffraction pattern recited in the instant claims.

Kakuta discloses a τ -form metal-free phthalocyanine pigment having a X-ray diffraction pattern with characteristic Bragg angles ($2\theta \pm 0.2^\circ$) of 7.6° , 9.2° , 16.8° , 17.4° , 20.4° , and 20.9° .

Col. 2, lines 16-19, col. 4, lines 38-42, 53-55, and Fig. 4.

Kakuta discloses that photoreceptors comprising said

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phthalocyanine exhibits high sensitivities to longer wavelength light. Col. 1, lines 58-63. Kakuta discloses that said phthalocyanine exhibits a maximum sensitivity at 790-810 nm, and is most useful in photoconductors image-wise exposed to a semiconductor laser. Col. 9, lines 38-41.

Kakuta does not disclose that the X-ray diffraction pattern of its τ -form metal-free phthalocyanine exhibits Bragg angles of 21.7° and 27.6° as recited in the instant claims. However, the instant specification discloses that the τ -form metal-free phthalocyanine having the X-ray diffraction pattern recited in the instant claims can be prepared by a method described in Japanese Patent 58-182639 (JP'639). Instant specification, page 21, lines 11-19. Kakuta is the US equivalent of JP'639. See the DERWENT abstract Acc. No. 1983-816039. Because all six Bragg angles disclosed by Kakuta correspond to Bragg angles recited in the instant claims, and because Kakuta's τ -form metal-free phthalocyanine is obtained by a method that makes a τ -form metal-free phthalocyanine having the X-ray diffraction pattern recited in the instant claims, it is reasonable to presume that Kakuta's τ -form metal-free phthalocyanine has a X-ray diffraction pattern that meets the limitation recited in the instant claims. The burden is on applicants to prove otherwise. In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

It would have been obvious for a person having ordinary skill in the art to use Kakuta's τ -form metal-free phthalocyanine pigment as the τ -form metal-free phthalocyanine in the photoreceptor rendered obvious over the combined teachings of JP'998, JP'250, Schaffert, and Tanigawa. That person would have had a reasonable expectation of successfully obtaining a photoreceptor having improved sensitivity to the longer wavelength region, and having the benefits disclosed by JP'998 and JP'250.

10. Claims 16, 25, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP'998, as evidenced by applicants' admission I, combined with JP'250, Schaffert, Tanigawa, and Kanoto, as applied to claim 15, 24, and 33 above, further combined with Kakuta, as evidenced by applicants' admission II and DERWENT abstract Acc. No. 1983-816039. See the DERWENT translations of JP'998 and JP'250, and the JPO translation of JP'998 for cites.

JP'998, as evidenced by applicants' admission I, combined with JP'250, Schaffert, Tanigawa, and Kanoto renders obvious an imaging apparatus comprising a process cartridge and an image forming method as described in paragraph 8 above, which is incorporated herein by reference.

As discussed in paragraph 8 above, JP'998 discloses that the phthalocyanine pigment is a τ -form metal-free phthalocyanine. JP'998 does not disclose that the τ -form metal-free phthalocyanine pigment has the X-ray diffraction pattern recited in the instant claims.

Kakuta discloses a τ -form metal-free phthalocyanine pigment that appears to have a X-ray diffraction pattern that meets the limitations recited in the instant claims. The discussions of Kakuta, applicants' admission II, and the DERWENT abstract, in paragraph 9, supra, are incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art to use Kakuta's τ -form metal-free phthalocyanine pigment as the τ -form metal-free phthalocyanine in the photoreceptor rendered obvious over the combined teachings of JP'998, JP'250, Schaffert, and Tanigawa and to use the resultant photoreceptor in the apparatus disclosed by Kanoto. That person would have had a reasonable expectation of successfully obtaining a photoreceptor having improved sensitivity to the longer wavelength region, thereby providing an electrophotographic image forming apparatus comprising an easily detachable process cartridge and a reversal development imaging method that also have improved sensitivity to the longer

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wavelength region, and that provide good toner images as taught by JP'250.

11. Claims 1, 5, 38, 39, and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent 7-128890 (JP'890), as evidenced by applicants' admission I, combined with JP'250, Schaffert, and Tanigawa. See the DERWENT machine-assisted translations of JP'890 and JP'250 for cites.

JP'890 discloses an electrophotographic photoreceptor comprising a conductive aluminum drum, an intermediate layer, a charge generation layer, and a charge transport layer. The intermediate layer has a thickness of 0.1 μm . The charge generation layer comprises 2.5 parts by weight of an X-form metal-free phthalocyanine pigment and 3 parts by weight of the asymmetric bisazo pigment (I-24), which meets the limitations of formula (VII) recited in instant claim 38. Translation, Table 1B(6), compound (I)-24; paragraphs 0035 and 0042; and example 8 in paragraph 0047. (Note that the DERWENT translation paragraph 0042 incorrectly states that "3.0 weight parts and 2.5 weight-parts of X type metal-less phthalocyanines were added for the illustration compound (1)-24 disazo pigment." Paragraph 0042 in JP'890 states that 3.0 weight parts of the compound (1)-24 and 2.5 weight parts of X type metal-less phthalocyanine are used to

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form the charge generation layer.) The weight ratio of phthalocyanine pigment to bisazo pigment is 2.5:3, which is within the range of 1:5 to 5:1 recited in instant claim 1. JP'890 also discloses that the asymmetric bisazo pigment can equally be the asymmetric bisazo pigment (I-29), which meets the limitations of formula (VIII) recited in instant claim 39. See the translation, Table 1-(7), compound (I)-29; paragraph 0043; and example 9, paragraph 0047. According to JP'890, its photoreceptor has high spectral sensitivity in the visible light to the near infrared region. Translation, paragraph 0004.

JP'890 does not exemplify a photoreceptor comprising an intermediate layer comprising titanium oxide as recited in the instant claims. However, JP'890 discloses that a fine-powder pigment of a metallic oxide, such as titanium oxide, may be added to the binder resin of its intermediate layer to prevent the occurrence of moire and to reduce the residual electric potential of the photoreceptor. Translation, paragraph 0030. These are the same benefits sought by applicants. See the instant specification, page 31, lines 9-11.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of JP'890, to add the metal pigment titanium oxide to the intermediate layer in the photoreceptor disclosed by JP'890. That person would have had a

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reasonable expectation of successfully obtaining an electrophotographic photoreceptor that prevents the occurrence of moire and exhibits a reduction in residual electric potential.

JP'890 does not disclose that the charge transport layer comprises a sulfur-containing compound as recited in the instant claims.

JP'250 discloses sulfur-containing compounds that meet the compositional limitations of formulas (III), (S-1), (S-2), and (S-3) recited in the instant claims. JP'250 discloses that said sulfur-containing compounds can be used as antioxidants in charge transport layers of photoreceptors. The discussion of JP'250 in paragraph 6, supra, is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art to use JP'250's sulfur-containing compounds that meet the compositional limitations of formulas (III), (S-1), (S-2), or (S-3) recited in the instant claims in an amount of 1.5 parts by weight per 100 parts by weight of the charge transport material, as an antioxidant in the charge transport layer in the photoreceptor rendered obvious over the teachings of JP'890. That person would have had a reasonable expectation of successfully obtaining a photoreceptor that has

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improved potential stability over long periods of time and that provides stable toner images after many repeated copies.

The recitation, "the photoreceptor is suitable for a reverse developing method in an electrophotographic image forming apparatus which comprises a contact charger," in claim 1 is merely a statement of intended use that does not distinguish the photoreceptor rendered obvious over the combined teachings of the cited prior art. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. It is well known in the electrophotographic arts that that the "production of positive prints from line negatives requires only a change of the xerographic developing material." The discussions of Schaffert and Tanigawa in paragraph 6 above are incorporated herein by reference. As discussed above, the photoreceptor rendered obvious over the combined teachings of the cited prior art meets the photoreceptor limitations recited in the instant claims. Thus, on the present record, the intended use recited in instant claim 1 does not appear to result in a compositional or structural difference between the photoreceptor recited in the

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instant claims and the photoreceptor rendered obvious over the combined teachings of the cited prior art.

12. Claim 47 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP'890, as evidenced by applicants' admission I, combined with JP'250, Schaffert, and Tanigawa, as applied to claim 1 above, further combined with additional teachings in JP'890. See the DERWENT translations of JP'890 and JP'250 for cites.

JP'890, as evidenced by applicants' admission I, combined with JP'250, Schaffert, and Tanigawa renders obvious an electrophotographic photoreceptor as described in paragraph 11 above, which is incorporated herein by reference.

JP'890 does not exemplify an intermediate layer having a layer thickness of 3 μm as recited in instant claim 47. However, as discussed in paragraph 11 above, JP'890 discloses that a fine-powder pigment of a metallic oxide, such as titanium oxide, may be added to the binder resin of its intermediate layer to prevent the occurrence of moire and to reduce the residual electric potential of the photoreceptor. Translation, paragraph 0030. These are the same benefits sought by applicants. See the instant specification, page 31, lines 9-11. JP'890 also teaches that the intermediate layer may have a layer

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thickness of "0 to 5 μm ." Translation, paragraph 0031. The range of "0 to 5 μm " encompasses the thickness of 3 μm recited in instant claim 47.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of JP'890, to add the metal pigment titanium oxide to the intermediate layer and to adjust, through routine experimentation, the thickness of the intermediate layer, such that the thickness is 3 μm , as recited in instant claim 47, in the photoreceptor rendered obvious over the combined teachings of JP'890, JP'250, Schaffert, and Tanigawa. That person would have had a reasonable expectation of successfully obtaining an electrophotographic photoreceptor that prevents the occurrence of moire and exhibits a reduction in residual electric potential, and that has the benefits disclosed by JP'250.

13. Claims 10, 11, 15, 20, 24, 29, 33, 40-45, 50, 51, and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP'890, as evidenced by applicants' admission I, combined with JP'250, Schaffert, and Tanigawa, as applied to claims 1, 5, 38, and 39 above, further combined with Kanoto. See the DERWENT translations of JP'890 and JP'250 for cites.

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JP'890, as evidenced by applicants' admission I, combined with JP'250, Schaffert, and Tanigawa renders obvious an electrophotographic photoreceptor as described in paragraph 11 above, which is incorporated herein by reference.

JP'890 does not disclose that the electrophotographic photoreceptor can be used in a process cartridge or in an apparatus as recited in the instant claims. Nor does JP'890 disclose that its photoreceptor can be used in the imaging forming method recited in the instant claims.

However, the use of process cartridges in electrophotographic apparatuses is well known in the art. Kanoto discloses an imaging forming apparatus comprising a readily detachable process cartridge. The apparatus and process cartridge meet the structural limitations recited in instant claims 10, 11, 20, 50, and 51 but for the particular photoreceptor. Kanoto further discloses that its imaging apparatus performs an image forming process that meets the process steps recited in instant claims 29 and 53, but for the step of the providing the particular photoreceptor. The discussion of Kanoto in paragraph 8, supra, is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Kanoto, to

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incorporate the electrophotographic photoreceptor rendered obvious over the combined teachings of JP'890, JP'250, Schaffert, and Tanigawa in Kanoto's detachable process cartridge in its image forming apparatus. That person would have had reasonable expectation of successfully obtaining a reversal development imaging method and an image forming apparatus comprising an easily detachable process cartridge having the benefits of being small and free from maintenance, each of which provides stable toner images after many repeated runs as disclosed by JP'250.

14. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP'890, as evidenced by applicants' admission I, combined with JP'250, Schaffert, and Tanigawa, as applied to claim 5 above, further combined with US 3,357,989 (Byrne). See the DERWENT translations of JP'890 and JP'250 for cites.

JP'890, as evidenced by applicants' admission I, combined with JP'250, Schaffert, and Tanigawa renders obvious an electrophotographic photoreceptor as described in paragraph 11 above, which is incorporated herein by reference.

As set forth in paragraph 11, supra, JP'890 discloses that the phthalocyanine pigment is a X-form metal-free

phthalocyanine. Translation of JP'890, examples 8 and 9. JP'890 does not disclose that the X-form metal-free phthalocyanine pigment has the X-ray diffraction pattern recited in the instant claim.

However, a X-form metal-free phthalocyanine pigment having a X-ray diffraction pattern recited in instant claim 7 is well known in the art, as shown by Byrne. Byrne discloses a X-form metal-free phthalocyanine pigment having a X-ray diffraction pattern that meets the limitations recited in the instant claim. See Fig. 1, and col. 2, lines 50-54, col. 5, lines 14-22, and reference claim 1. Byrne's phthalocyanine has photosensitivity to the wavelength region of greater than 700 nm. See Fig. 2. Byrne discloses that its phthalocyanine is especially useful as a photoconductive material in electrophotography, and that it provides "surprisingly high photosensitivity." Col. 2, lines 3-9.

It would have been obvious for a person having ordinary skill in the art to use Byrne's X-form metal-free phthalocyanine pigment having a X-ray diffraction pattern that meets the limitation of the instant claim as the X-form metal-free phthalocyanine in the photoreceptor rendered obvious over the combined teachings of JP'890, JP'250, Schaffert, and Tanigawa. That person would have had a reasonable expectation of

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successfully obtaining a photoreceptor having improved sensitivity to the longer wavelength region and having the benefits disclosed by JP'890 and JP'250.

15. Claim 17, 26, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP'890, as evidenced by applicants' admission I, combined with JP'250, Schaffert, Tanigawa, and Kanoto, as applied to claim 15, 24, and 33 above, further combined with Byrne. See the DERWENT machine-assisted translations of JP'890 and JP'250 for cites.

JP'890, as evidenced by applicants' admission I, combined with JP'250, Schaffert, Tanigawa, and Kanoto renders obvious an imaging apparatus comprising a process cartridge and an image forming method as described in paragraph 13 above, which is incorporated herein by reference.

As discussed in paragraph 13 above, JP'890 discloses that the phthalocyanine pigment is a X-form metal-free phthalocyanine. JP'890 does not disclose that the X-form metal-free phthalocyanine pigment has the X-ray diffraction pattern recited in the instant claims. However, a X-form metal-free phthalocyanine pigment having a X-ray diffraction pattern recited in the instant claims is well-known in the art, as shown

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by Byrne. The discussion of Byrne in paragraph 14, supra, is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art to use Byrne's X-form metal-free phthalocyanine pigment as the X-form metal-free phthalocyanine in the photoreceptor rendered obvious over the combined teachings of JP'890, JP'250, Schaffert, and Tanigawa and to use said photoreceptor in the apparatus disclosed by Kanoto. That person would have had a reasonable expectation of successfully obtaining a photoreceptor having improved sensitivity to the longer wavelength region, thereby providing an electrophotographic image forming apparatus comprising an easily detachable process cartridge and a reversal development imaging method that have improved sensitivity to the longer wavelength region and that provide good toner images as taught by JP'250.

16. Applicant's arguments filed on Aug. 8, 2006, with respect to the rejections over JP'998 and the rejections over JP'890, set forth in paragraphs 6-15 above have been fully considered but they are not persuasive.

Applicants assert that "JP'998, or JP'890 do not want to change their electro-conductive substrate is [sic] as they are

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not concerned with improving the properties of the electroconductive substrate."

Applicants' assertion is not probative. The amendments to claims 1, 10, 20, and 29 filed on Aug. 8, 2006, removed the requirement that the aluminum drum have a diameter of 30 mm. Accordingly, the rejections in paragraphs 5 and 10 above do not describe changing the electroconductive substrates of JP'998 and JP'890, and therefore do not rely on the disclosures in Kutami and Fujimura. Applicants' assertions regarding the disclosure in Kutami and Fujimura are not probative.

Applicants further assert that none of the cited references disclose or suggest an electrophotographic photoreceptor which is suitable for a reverse developing method in an image forming apparatus that comprises a contact charger, an image forming apparatus and a process cartridge that both comprise a developing device which "reversely develops the electrostatic latent image," and a reverse development process. Applicants further assert that "not every photoreceptor is suitable for reverse developing and thus this limitations [sic] is proper."

Applicants' assertions are not persuasive. Applicants' assertion that "not every photoreceptor is suitable for reverse developing" is mere attorney argument. Applicants have not provided any evidence to support their assertion that the

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photoreceptors rendered obvious over the cited prior art are not suitable for reverse developing. As discussed in paragraph 6 above, it is well known in the art of electrophotography that reverse development requires only a change of the developing material used. For the reasons discussed in paragraphs 6-15, supra, the photoreceptors rendered obvious over the combined teachings of the cited prior art meet the photoreceptor limitations recited in the instant claims. Thus, on the present record, the intended use recited in instant claim 1 does not appear to result in a compositional or structural difference between the photoreceptor recited in instant claims 1, 5-7, 38, 39, 47, and 48 and the photoreceptor rendered obvious over the combined teachings of the cited prior art. Moreover, as discussed in paragraphs 8 and 13 above, Kanoto teaches an image forming apparatus comprising a contact charger. Kanoto also teaches that the developing device 3 in the process cartridge or the image forming apparatus can reverse develop the electrostatic latent image formed on the photoreceptor with a developer having the same polarity as the charge remaining on the photoreceptor. For the reasons discussed in paragraphs 8, 10, 13, and 15, the combined teachings of Kanoto and the other cited prior art render obvious an image forming apparatus and a process cartridge that meet the structural elements recited in

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instant claims 10, 11, 15-17, 20, 24-26, 40-43, 50, and 51, and an image forming method that meets the steps recited in instant claims 29, 33-35, 44, 45, and 53. Accordingly, the rejections in paragraphs 6-15 stand.

17. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

18. The following rejections are provisional obviousness-type double patenting rejections.

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19. Claims 1, 5, 38, 47, and 48 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 31, 35, 40, 42, and 44-52 of copending Application No. 11/077,356 (Application'356) in view of US 5,965,311 (Suzuki), JP'250, Schaffert, and Tanigawa. See the DERWENT machine-assisted translation of JP'250 for cites.

Reference claim 46, which depends on reference claim 48, recites an electrophotographic photoreceptor comprising an electroconductive substrate and a photoconductive layer comprising a phthalocyanine pigment and an asymmetric disazo pigment of formula (1). The phthalocyanine pigment is a metal free- τ -type phthalocyanine pigment or a metal free X-type phthalocyanine pigment. The phthalocyanine pigment and the asymmetric disazo pigment are present in an amount ratio by weight of 2.5:3.5 to 1:1, which is within the weight ratio range of 1:5 to 5:1 recited in instant claim 1. The phthalocyanine pigment meets the phthalocyanine pigment limitations recited in instant claim 5. The asymmetric disazo of formula (1) meets the compositional limitations of formula (II) recited in instant claim 1. Reference claim 31, which depends on reference claim 48, requires that the photoconductive layer comprise a charge transport layer and a charge generation layer comprising the phthalocyanine pigment and the asymmetric disazo pigment.

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The layer structure meets the layer structure recited in instant claim 1. Reference claim 40, which depends on reference claim 50, which depends in turn on reference claim 48, requires that the asymmetric disazo pigment be a disazo pigment that meets the disazo pigment compositional limitation of formula (VII) recited in instant claim 38. See also references claims 42 and 51, which also require that the disazo pigment be a disazo pigment that meets the limitation of formula (VII).

The subject matter recited in the claims of Application' 356 does not recite the presence of an intermediate layer as recited in the instant claims. Nor does it require that the conductive substrate be an aluminum drum.

The use of an aluminum drum as the electroconductive substrate of a photoreceptor is well known in the art. See Suzuki, col. 4, lines 56-60, col. 4, line 63, to col. 5, line 8, and col. 5, lines 62-64. Suzuki teaches an intermediate layer that is located between the electroconductive support and the charge generation layer. The intermediate layer comprises a binder resin, first titanium oxide A particles having a primary particle diameter of 0.01 to 0.1 μm , and second titanium oxide B particles having a primary particle diameter of 0.1 to 1 μm . The intermediate layer has a thickness of 10 μm that meets the layer thickness range of "up to 10 μm , excluding 0" recited in

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instant claim 48. See col. 5, lines 45-48, and embodiment 1 (E1) at col. 5, lines 54-64. Suzuki also teaches that the intermediate layer preferably has a thickness of 0.3 to 30 μm , which encompasses the layer thickness of 3 μm recited in instant claim 47. Col. 4, lines 40-43.

According to Suzuki, when a photoreceptor comprises its intermediate layer, the layer prevents the occurrence of interference fringes and image defects. The photoreceptor provides excellent images. Col. 3, lines 13-15, and Table 1 at col. 7, example E1 and the accompanying text.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Suzuki, to use the intermediate layer taught by Suzuki having a thickness as recited in instant claims 47 and 48 in the photoreceptor rendered obvious over the subject matter recited in the claims of Application'356. That person would have had a reasonable expectation of successfully obtaining an electrophotographic photoreceptor that prevents the occurrence of interference fringes and image defects and that provides excellent images.

The subject matter recited in the claims of Application'356 does not require the presence of an organic sulfur-containing compound in the charge transport layer as recited in instant claim 1.

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JP'250 discloses sulfur-containing compounds that meet the compositional limitations of formulas (III), (S-1), (S-2), and (S-3) recited in the instant claims. JP'250 discloses that said sulfur-containing compounds can be used as antioxidants in charge transport layers of photoreceptors. The discussion of JP'250 in paragraph 6, supra, is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art to use JP'250's sulfur-containing compounds that meet the compositional limitations of formulas (III), (S-1), (S-2), or (S-3) recited in the instant claims in an amount of 1.5 parts by weight per 100 parts by weight of the charge transport material, as an antioxidant in the charge transport layer in the photoreceptor rendered obvious over the subject matter recited in the claims of Application'356 combined with the teachings of Suzuki. That person would have had a reasonable expectation of successfully obtaining a photoreceptor that has improved potential stability over long periods of time and that provides stable toner images after many repeated copies.

The recitation, "the photoreceptor is suitable for a reverse developing method in an electrophotographic image forming apparatus which comprises a contact charger," in claim 1

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is merely a statement of intended use that does not distinguish the photoreceptor rendered obvious over the subject matter recited in the claims of Application'356 combined with Suzuki and JP'250. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. It is well known in the electrophotographic arts that that the "production of positive prints from line negatives requires only a change of the xerographic developing material." The discussions of Schaffert and Tanigawa in paragraph 6 above are incorporated herein by reference. As discussed above, the photoreceptor rendered obvious over subject matter recited in the claims of Application'356 combined with the teachings of the cited prior art meets the photoreceptor limitations recited in the instant claims. Thus, on the present record, the intended use recited in instant claim 1 does not appear to result in a compositional or structural difference between the photoreceptor recited in the instant claims and the photoreceptor rendered obvious over the subject matter recited in the claims of Application'356 combined with the cited prior art.

20. Claims 10, 11, 15, 20, 24, 29, 33, 40, 42, 44, 50, 51, and 53 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 31, 35, 40, 42, and 44-52 of copending Application'356 in view of Suzuki, JP'250, Schaffert, and Tanigawa, further in view of Kanoto. See the DERWENT machine-assisted translation of JP'250 for cites.

The subject matter recited in the claims of Application'356 in view of Suzuki, JP'250, Schaffert, and Tanigawa renders obvious an electrophotographic photoreceptor as described in paragraph 19 above, which is incorporated herein by reference.

The claims in Application'356 do not recite a process cartridge or an apparatus as recited in instant claims 20 and 10, respectively. Nor do the claims recite an image forming method comprising a reversal developing step as recited in instant claim 29.

However, the use of process cartridges in electrophotographic apparatuses is well known in the art. Kanoto discloses an imaging apparatus comprising a readily detachable process cartridge, which both meet the structural limitations recited in instant claims 10, 11, 20, 50, and 51, but for the particular photoreceptor. Kanoto further discloses

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that its imaging apparatus performs an imaging forming process that meets the process steps recited in instant claims 29 and 53, but for the step of the providing the particular photoreceptor. The discussion of Kanoto in paragraph 8 above is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Kanoto, to incorporate the electrophotographic photoreceptor rendered obvious over the subject matter recited in the claims of Application'356 combined with the teachings of Suzuki, JP'250, Schaffert, and Tanigawa in Kanoto's detachable process cartridge in its image forming apparatus. That person would have had reasonable expectation of successfully obtaining a reversal development imaging method and an image forming apparatus comprising an easily detachable process cartridge having the benefits of being small and free from maintenance, each of which provides stable toner images after many repeated runs as disclosed by JP'250.

21. Claim 6 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 31, 35, 40, 42, and 44-52 of copending Application'356 in view of Suzuki, JP'250, Schaffert, and

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Tanigawa, further in view of Kakuta and DERWENT abstract Acc. No. 1983-816039. See the DERWENT machine-assisted translation of JP'250 for cites.

The subject matter recited in the claims of Application'356 in view of Suzuki, JP'250, Schaffert, and Tanigawa renders obvious an electrophotographic photoreceptor as described in paragraph 19 above, which is incorporated herein by reference.

The claims in Application'356 do not recite that the metal-free τ -type phthalocyanine recited in the reference claims has the X-ray diffraction pattern recited in instant claim 6.

However, Kakuta discloses a τ -form metal-free phthalocyanine that appears to have a X-ray diffraction pattern as recited in the instant claims. The discussion of Kakuta in paragraph 9, supra, is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art to use Kakuta's τ -form metal-free phthalocyanine pigment as the metal-free phthalocyanine in the photoreceptor rendered obvious over the subject matter recited in the claims of Application'356 combined with the teachings of Suzuki, JP'250, Schaffert, and Tanigawa. That person would have had a reasonable expectation of successfully obtaining a photoreceptor having improved sensitivity to the longer wavelength region, and having the benefits disclosed by JP'250.

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22. Claims 16, 25, and 34 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 31, 35, 40, 42, and 44-52 of copending Application No. 11/077,356 (Application'356) in view of Suzuki, JP'250, Schaffert, Tanigawa, and Kanoto, further in view of Kakuta and DERWENT abstract Acc. No. 1983-816039. See the DERWENT machine-assisted translation of JP'250 for cites.

The subject matter recited in the claims of Application'356 in view of Suzuki, JP'250, Schaffert, Tanigawa, and Kanoto renders obvious an process cartridge, an apparatus, and a method of forming an image as described in paragraph 20 above, which is incorporated herein by reference.

The claims in Application'356 do not recite that the τ -form metal-free phthalocyanine recited in the reference claims has the X-ray diffraction pattern recited in the instant claims. However, Kakuta discloses a τ -form metal-free phthalocyanine that appears to have a X-ray diffraction pattern as recited in the instant claims. The discussion of Kakuta in paragraph 9, supra, is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art to use Kakuta's τ -form metal-free phthalocyanine pigment as the metal-free phthalocyanine in the

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photoreceptor rendered obvious over the subject matter recited in the claims of Application'356 combined with the teachings of Suzuki, JP'250, Schaffert, and Tanigawa, and to use the resulting photoreceptor in Kanoto's detachable process cartridge in its image forming apparatus. That person would have had reasonable expectation of successfully obtaining a photoreceptor having improved sensitivity to the longer wavelength region, thereby providing an electrophotographic imaging apparatus comprising an easily detachable process cartridge and a reversal development imaging method, each of which has improved sensitivity to the longer wavelength region, and provides good toner images as taught by JP'250.

23. Claim 7 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 31, 35, 40, 42, and 44-52 of copending Application No. 11/077,356 (Application'356) in view of Suzuki, JP'250, Schaffert, and Tanigawa, further in view of Byrne.

The subject matter recited in the claims of Application'356 in view of Suzuki, JP'250, Schaffert, and Tanigawa renders obvious an electrophotographic photoreceptor as described in paragraph 19 above, which is incorporated herein by reference.

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The claims in Application'356 do not recite that the metal-free X-type phthalocyanine recited in the reference claims has the X-ray diffraction pattern recited in instant claim 7.

However, a X-form metal-free phthalocyanine pigment having a X-ray diffraction pattern recited in the instant claims is well known in the art, as shown by Byrne. The discussion of Byrne in paragraph 14, supra, is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art to use the Byrne X-form metal-free phthalocyanine pigment having a X-ray diffraction pattern that meets the limitation of the instant claim as the metal-free X-type phthalocyanine pigment in the photoreceptor rendered obvious over the subject matter recited in the claims of Application'356 combined with the teachings of Suzuki, JP'250, Schaffert, and Tanigawa. That person would have had a reasonable expectation of successfully obtaining a photoreceptor having improved sensitivity to the longer wavelength region, and having the benefits disclosed by JP'250.

24. Claims 17, 26, and 35 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 31, 35, 40, 42, and 44-52 of

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compending Application'356 in view of Suzuki, JP'250, Schaffert, Tanigawa, and Kanoto, further in view of Byrne.

The subject matter recited in the claims of Application'356 in view of Suzuki, JP'250, Schaffert, Tanigawa, and Kanoto renders obvious an process cartridge, an apparatus, and a method of forming an image as described in paragraph 20 above, which is incorporated herein by reference.

The claims in Application'356 do not recite that the metal-free X-type phthalocyanine recited in the reference claims has the X-ray diffraction pattern recited in the instant claims. However, a X-form metal-free phthalocyanine pigment having an X-ray diffraction pattern recited in the instant claims is well known in the art, as shown by Byrne. The discussion of Byrne in paragraph 14, supra, is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art to use Byrne's X-form metal-free phthalocyanine pigment as the metal-free phthalocyanine in the photoreceptor rendered obvious over the subject matter recited in Application'356 combined with the teachings of Suzuki, JP'250, Schaffert, and Tanigawa, and to use the resulting photoreceptor in Kanoto's detachable process cartridge in its image forming apparatus. That person would have had reasonable expectation of successfully obtaining a photoreceptor having improved

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sensitivity to the longer wavelength region, thereby providing an electrophotographic imaging apparatus comprising an easily detachable process cartridge and a reversal development imaging method, each of which has improved sensitivity to the longer wavelength region and provides good toner images as taught by JP' 250.

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (571) 272-1382. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mark Huff, can be reached on (571) 272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry regarding papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Claudia Sullivan, whose telephone number is (571) 272-1052.

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JLD
Sep. 29, 2006

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